

X-LAS MkII Scintillometer



Fast, light and stable carbon fibre scintillometer for landscape scale flux measurements

The new X-LAS MkII Scintillometer provides continuous measurements of sensible heat fluxes over path lengths from 1 km up to 12 km. The measurement process is very straight forward and yields fast results. Since limited power is required, in most cases a simple solar-charged battery is sufficient.

The X-LAS MkII receiver's internal digital processing unit automatically computes all relevant parameters, such as Cn^2 and the sensible heat flux. Real-time data is available on the display so you will know the status of your experiment in seconds. The built-in data logger stores several months of measurements and results.

A digital interface allows remote real-time display and full control over the instrument operational settings. Analogue outputs are also available enabling connection of the instrument to virtually any data acquisition system. This allows for easy integration into new or existing measurement networks.

Carrying instruments around for field deployment is already labour intensive enough. The X-LAS MkII can be installed and configured using its built-in display and key-pad without the need for any extra equipment, and features a light carbon fibre housing for easier transport. The carbon fibre also ensures a very stiff and temperature stable enclosure for the optics, ensuring accurate, long term data.

Specifications	
Path length	1 to 12 Km
Aperture diameter	328 mm
Wavelength	850 nm (40 nm FWHM)
Scintillation bandwidth	10-17 to 10-11
Carrier frequency	6.5 to 7.5 kHz (50% duty cycle)
Communication options	Digital RS-232/422
Analog output	0 to 2.4 V
Instrument control and data display	Built-in display and key-pad or remote via digital interface
Pan and tilt adjustment	Integrated
Heating system (for frost and condensation free window)	Programmable lens heater (receiver) Self-regulating lens heater (transmitter)
Data processing	Internal processing of Cn^2 , free sensible heat flux and other parameters
Time synchronisation	Built-in data logger with GPS antenna for time and location
External sensor connection	GPS + optional sensor kit: wind speed, temperature and pressure
Software included	EVATION® (instrument control and data analysis)
Power requirements	12 VDC 6 W (heater off) / 54 W (maximum when heater on)
Operating temperature	-20 °C to +50 °C
Humidity range	0 to 100% non-condensing
Environmental protection	IP65
Weight per transmitter/receiver	18 kg
Dimensions (l x h x d)	1010 x 552 x 426 mm (with sunshield)
Calibration	Calibration against Kipp & Zonen reference instrument supplied
Options	
Meteorological sensor kit	For wind speed, temperature and pressure. Comes with 10 m cable and waterproof plug for direct connection to LAS MkII receiver



The scintillometer on its own measures changes in refractive index of the atmosphere, Cn^2 , but with the optional meteorological sensor kit it can calculate sensible heat flux. This kit consists of wind speed, temperature and pressure sensors and plugs directly into the X-LAS MkII receiver.

The EVATION® software suite is included as standard to view real-time data numerically and graphically and provides advanced data post-processing.